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ABSTRACT

A study assessed the effectiveness of the Pennsylvania State University (PSU) Reticence Program as a treatment for individuals with communication difficulties, such as communication apprehension, reticence, and shyness. Several standardized tests of social communication problems were used in a pretest-posttest design with a control group and two treatment groups: special sections and regular public speaking sections of the basic speech communication course at PSU. Results indicated that on the overall Social Reticence Scale (Jones and Russell) and one of its subscales (difficulty meeting people), participants in the reticence group (Option D) showed significant decreases in shyness relative to both the public speaking (Option A) and control groups. A similar pattern of effects was found for the Shy Scale (McCroskey et al.) and the public speaking and meeting subscales of the Personal Report of Communicaton Apprehension (PRCA). On the group subscale those in Option D and Option A showed significant improvement relative to the control group. Those in the reticence section showed the greatest reduction in fear of public speaking, although public speaking students reported significant improvement over the control group. More research is needed to shed light on the distinctions between shyness and reticence. (Five tables of data are included; 40 references are attached.) (Author/SR)

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Does the Penn State Reticence Program Work?: A Comparison of Special and Regular Options of a Basic Speech Communication Course

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Does the Penn State Reticence Program Work?:

A Comparison of Special and Regular Options of a Basic

Speech Communication Course

Abstract

The primary goal of the present study was to assess the effectiveness of the Pennsylvania State University (PSU) Reticence Program as a treatment for individuals with communication difficulties, such as communication apprehension, reticence, and shyness. This study was a follow-up of a recent study by Kelly, Duran, and Stewart (1990) which produced mixed results. Following Glaser's (1981) comments on problems in previous studies, the present study employed several standardized tests of social communication problems and used a pretest-posttest design with a control group and two treatment groups: special sections of the basic speech communication course at PSU and regular public speaking sections of that same course. Participants in all three groups completed the PRCA-24, the McCroskey, Andersen, Richmond, and Wheeless (1981) Shy Scale, and the Jones and Russell (1982) Social Reticence Scale (SRS) during the first and last weeks of the semester.

Results of analyses of covariance indicated that on the overall Social Reticence Scale and one of its subscales (difficulty meeting people) participants in the reticence group (Option D) showed significant decreases in shyness relative to both the public speaking (Option A) and control groups. A similar pattern of effects was found for the Shy Scale and the public speaking and meeting subscales of the PRCA. On the group subscale those in Option D and Option A showed significant improvement relative to the control group. Those in the reticence section showed the greatest reduction in public speaking and composite PRCA scores, although public speaking students reported significant improvement over the control group.

Does the Penn State Reticence Program Work?:

A Comparison of Special and Regular Options of a

Basic Speech Communication Course

Although it has been in existence for over 30 years, the Pennsylvania State University (PSU) Reticence Program, developed by Gerald M. Phillips, has not been thoroughly evaluated (Glaser, 1981). Although the program, designed to help individuals with social communication problems, has been described in the communication literature (Cohen, 1980; Kelly, 1989, 1991; Phillips, 1986; Phillips & Metzger, 1973), its effectiveness as a treatment has not been sufficiently tested. Kelly, Duran, & Stewart (1990) report a recent, systematic attempt to examine how well the program works. The present study was designed as a follow-up of the Kelly et al. study because of that study's mixed results and limitations. In the next sections we provide a brief description of the treatment program, discuss the nature of communication problems, and review relevant research.

The PSU Reticence Program

Phillips calls the approach used in the PSU program "rhetoritherapy." Rhetoritherapy is a skills training program (Glaser, 1981; Kelly, 1984), but it also attempts to change individuals' beliefs about communication and to help them see situations as rhetorical (Cohen, 1980; Phillips, 1986). The program has recently been described in detail by Kelly (1989; 1991); therefore, this discussion will be brief.

As Phillips (1986) describes it, "The fundamentals of the program have crystallized in recent years in a combination of cognitive restructuring, consisting mainly of learning basic rhetorical principles. . . and skills training based on a combination of traditional speech performance instruction and instruction in communication competencies" (p. 357). Central to the

program is goal setting. Individuals learn to identify specific goals for their behavior, plan and perform the behaviors to achieve those goals, and then evaluate their performance (Phillips, 1986). The program focuses on changing behavior, not feelings about communicating. Thus, a direct attempt to reduce anxiety or apprehension is not included in the program. Instead, goal setting is combined with instruction in how to analyze situations, take the perspective of the other, adapt to listeners, and select alternative plans of action (Phillips, 1986).

Communication Problems

The PSU Reticence Program was designed as a treatment for the problem of reticence (Phillips & Metzger, 1973; Phillips, 1977, 1986). The major characteristic of reticent persons is their avoidance of social situations in which they feel inept, although reticent individuals may or may not actually have deficient social skills (Phillips, 1986). In addition, a reticent person may or may not experience fear about speaking (Phillips, 1986). Reticent individuals avoid social situations because they believe that they cannot perform competently.

As Kelly (1989) describes the entrance process, individuals interested in the PSU Reticence Program participate in a screening interview. No standardized paper and pencil measures are administered; thus, it is not possible to know what specific communication problems (i.e., reticence, shyness, or communication apprehension) the group of volunteers have (Kelly, et al., 1990). They may experience reticence, shyness, and/or communication apprehension. It is important, therefore, to briefly explain these related problems rather than to restrict this discussion to the problem of reticence.

McCroskey (1984) defines communication apprehension as "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons" (p. 13). Individuals who experience high levels of communication apprehension tend to avoid and withdraw from communication (McCroskey, 1984). However, apprehension is internally experienced and may or may not produce behavioral consequences (McCroskey, 1984). One recent study (Beatty, Dobos, Balfantz, & Kuwabara, 1991) even suggests that behavioral disruption might be a cause rather than a consequence of communication apprehension.

There exists a broad spectrum of conceptual approaches to shyness. Many scholars view it as a multi-faceted problem that encompasses the characteristics of reticence and communication apprehension (e.g., Buss, 1984; Zimbardo, 1977). Buss (1984) defines shyness as "discomfort, inhibition, and awkwardness in social situations, especially with people who are not familiar" (p. 39). It is a problem with instrumental, emotional, and cognitive components (Buss, 1984). Zimbardo (1977) describes shyness as a problem characterized by anxiety, low self-esteem, inadequate social skills, and feelings of self-consciousness. McCroskey and Richmond (1982) define shyness as "the tendency to be timid, reserved, and most specifically, talk less" (p. 460), providing a view of shyness as a strictly behavioral problem. Jones and Russell (1982) conceptualize shyness as including "attitudes and feelings such as reticence and a lack of confidence particularly in new or unfamiliar social settings, excessive preoccupation with self in the presence of others, inadequate social skills, and disruptive anxiety and self-derogation in social settings" (p. 629). This approach defines shyness as a problem that is both behavioral and internally experienced.

This discussion highlights the difficulty of knowing precisely what type(s) of communication problems individuals have who voluntarily enroll in a program such as that offered at Penn State. The specific natures of these problems and the distinctions among them is a subject open to debate (Bell, 1986; M. Booth-Butterfield & S. Booth-Butterfield, 1986; Clevenger, 1984; Kelly, 1982; Kelly, Duran, & Stewart, 1990; Kelly, Phillips, & McKinney, 1982; Leary, 1983; McCroskey & Richmond, 1982; Miller, 1984). Therefore, similar to Kelly et al (1990), we assumed that the participants who elected the PSU Reticence Program could experience any or all of the three problems of reticence, communication apprehension, or shyness. Even though Phillips designed the program for reticent communicators, given the procedure of enrolling students in the program, one cannot assume they are reticent (as opposed to shy or apprehensive). These individuals identified themselves as having communication problems by responding to a description of the treatment program and took part in a screening interview conducted by trained interviewers. At the interviews, they reported a variety of concerns such as fear, inability to initiate and sustain interaction, self consciousness, and so forth. This approach is fully consistent with Phillips's view of rhetoritherapy as "an individualized speech skills training program for each individual regardless of the individual's physical or mental condition" (Phillips, 1986, p. 361).

Review of Treatment Literature

Several studies have been done to assess the effectiveness of the rhetoritherapy program at PSU, although most of those studies have not been published. We examine the unpublished literature and then discuss the Kelly et al. (1990) study, which was the impetus for the current research.

The earliest study (Metzger, 1974) evaluated improvements in the actual

behavior of reticent students during instruction and up to one year later. The trainer, students in the program, and outside observers (who viewed videotapes of the students as they were interviewed prior to training, at two points during the course of training, and a minimum of six months after training was completed), made judgments of improvement. Metzger concluded that most trainees showed noticable or adequate improvement, with a few rated as minimally improved, primarily in terms of increased and more purposeful talk, and increased and more appropriate nonverbal behavior (Metzger, 1974).

Oerkvitz (1975) conducted a second longitudinal study which focused on students' perceptions of their improvement at one year or later. Of the 154 respondents, 75% indicated that they had improved, 17% said they had not, and the remaining gave mixed responses.

Domenig (1978) compared self-reports of students in reticence sections to students who had undergone training in regular speech communication performance courses. Overall, students in the reticence program rated themselves as more competent in a variety of situations at the end of instruction, and reported greater improvement than students in regular speech sections.

These studies cannot be easily compared because they used nonstandardized assessment procedures. In contrast, McKinney (1980) evaluated improvement with the PRCA (McCroskey, 1970) and the Unwillingness to Communicate Scale (Burgoon, 1976). In addition he used a short version of the Stanford Shyness Scale and a reticence measure created from the standard set of questions used during pre-enrollment interviews. Like Domenig (1978), McKinney administered the pretest and posttest to students in a speech communication course and to students in the reticence program. Reticent students reported significant decreases in anxiety and avoidance behavior on virtually all items dealing with interviewing, class participation, social interaction, and group discussion,

and on most public speaking items. Students in the regular courses did not report such improvement. However, McKinney did not control for simple regression toward the mean; hence, the results are questionable (Kelly et al., 1990).

Results of this research support the conclusion that the Reticence Program at PSU may be effective in reducing self-reported apprehension and avoidance and, to a lesser extent, in improving behavior. This conclusion is tempered by the observation that these studies have generally lacked sufficient methodological rigor (Glaser, 1981; Page, 1980). Specifically, none of these studies utilized a control group design. In the Domenig (1978) and McKinney (1980) research, self-reports of those in the Reticence Program were compared to self-reports of students undergoing training in speech communication courses. Additionally, with the exception of the McKinney study, these studies used nonstandardized, non-quantifiable measures, which makes comparison of them difficult at best.

A study by Kelly, Duran, and Stewart (1990) overcame these limitations by evaluating the effectiveness of a program modeled after the PSU Reticence Program using a pretest-posttest control group design and employing standardized measures of communication problems. Kelly et al. compared a control group with two treatment conditions: a reticence program and a speech communication performance course. Participants completed pre- and post-test questionnaires consisting of the PRCA-24 (McCroskey, 1982), the Shy Scale (McCroskey, Andersen, Richmond, & Wheeless, 1981), and the Social Reticence Scale (Jones & Russell, 1982).

Results of the study can be summarized as follows: (1) on the PRCA-24 group, dyadic, and public speaking subscales, as well as on overall scores, participants in the two treatment conditions reported significant decreases in

communication apprehension as compared to the control group, but the two treatments did not differ in general; (2) in comparison to the control group, the reticence and speech conditions produced significant reductions in self-reported shyness only as measured by the problems communicating subscale of the Social Reticence Scale; (3) on the Social Reticence Scale and to a lesser extent the PRCA-24, the reticence program appeared to be more effective than the speech communication course for those with the highest pretest scores; (4) on the Shy Scale, a significant sex X condition interaction revealed that females in the reticence condition showed the greatest reduction in self-reported shyness; and on other-reports of shyness, for the Social Reticence Scale the treatment conditions did not differ from the control group, but on the Shy Scale the two treatments differed from the control group but not from each other.

Thus, the Kelly et al. (1990) study produced mixed results and raises many questions. First, it is unclear whether the reticence treatment is any more effective than a regular performance-based speech class in reducing apprehension and shyness, although in general both appear to be more effective than no treatment. Second, treatment effects seem to differ depending on which measure is used. Finally, males and females respond differently to treatment at least as assessed by some measures. Additional research is clearly warranted to address these questions.

In addition, two limitations of the Kelly et al. (1990) study mandate additional research. First, the sample size for each of the three conditions was fairly small (approximately 20 each). When these numbers are further divided into males and females, the cell sizes become quite small. Second, the study did not examine the actual PSU Program, which is problematic for one primary reason. At the university where the Kelly et al. (1990) study was

conducted, there is no required speech course as there is at PSU. Therefore, participants in the speech course and the reticence course were volunteers. The level of motivation of these students was undoubtedly very high because they had to take the full initiative to seek out and enroll in these courses. This is especially true for those with communication problems, for whom the act of enrolling in a course to work on their communication was certainly difficult. At PSU, students must take the basic speech communication course and are volunteers only in terms of which option of the course they select. For these students, switching to a special section for reticent communicators was probably an easier decision than the decision to voluntarily enroll in a speech course. Because these participants are not "true" volunteers, their motivation may differ from that of the individuals in the Kelly et al. (1990) study. It is quite possible that very different results might be obtained in the situation in which a speech course is required for graduation.

Research Questions and Hypotheses

The overall purpose of the present study was to assess the effectiveness of the PSU Reticence Program and a performance-based speech course in reducing self-reported communication apprehension and shyness. The Kelly, Duran and Stewart (1990) study found that both treatment conditions produced improvements as compared to a control group. Therefore, the following research hypothesis was posed:

H_1: The two treatment conditions differ from the control group on posttest measures of communication apprehension and shyness.

Kelly et al. (1990) found few differences between the special reticence option and the public speaking option in terms of the reduction of communication apprehension and shyness. However, given the small sample size of the study, it is likely that power was insufficient to detect small or

moderate effects. Thus, the research question was raised:

RQ_1: Are there significant differences between the reticence and speech conditions on posttest measures of communication apprehension and shyness?

Method

Participants

Participants were 177 undergraduate students (91 males and 86 females), primarily upperclassmen, enrolled at either PSU or Clarion University of Pennsylvania. Participants in the two treatment conditions were recruited from the public speaking (Option A) and reticence options (Option D) of the basic required speech communication course at PSU. Pretest and posttest data were collected from 65 Option A students (36 males, 29 females) and 51 Option D students (24 males and 27 females).[1] Participants for the control group (31 males and 30 females) were recruited from introductory computer science courses at Clarion University. The control group was obtained at another university in Pennsylvania in order to ensure that participants were not enrolled in the speech communication course and had not taken the course. Since the basic course is required of all PSU students, it would have been difficult to recruit participants who had no exposure to the course.

All participants were volunteers who received no course credit for participating. The volunteer rate was extremely high with nearly all of the students approached agreeing to participate. Participants were informed that the research was designed to study the effects of college courses on people's attitudes about communicating.

Dependent Variables

Shyness and communication apprehension were selected as the dependent variables in this study for several reasons. First, this research was an

attempt to replicate the Kelly et al. (1990) study, which used these dependent variables. Second, there is no paper and pencil measure of reticence available, but in previous research volunteers in the PSU program scored high on measures of shyness and apprehension. In addition, reliable and valid measures of these two constructs exist and have been used by researchers in the field.

Shyness was measured by the Social Reticence Scale (SRS) (Jones & Russell, 1982). The SRS consists of 22 Likert-type statements, with one item (Item #22 "Basically I am a shy person") serving as a criterion measure. According to Jones and Russell (1982), the SRS measures four dimensions of shyness: difficulties in meeting people, making friends, and poor self-projection (MP); problems in communicating (PC); self-consciousness and negative affect (SCNA); and feeling isolated from others (FI). However, in their research, the creators of the scale use the overall SRS scores (Jones & Russell, 1982; Jones, Briggs, & Smith, 1986). As a result, the decision was made to conduct analyses using both the overall SRS score and the dimension subscores. Jones and Russell (1982) provide evidence of the criterion and construct validity of the SRS, and Briggs and Smith (1986) report on its behavioral validity. Pretest and posttest reliabilities, respectively, were: SRS overall .93, .92; MP .85, .83; PC .86, .83; SCNA .80, .80; FI .74, .69.

Shyness was also measured by the SHY Scale (McCroskey, Andersen, Richmond, & Wheeless, 1981). The SHY Scale is unidimensional, consisting of 14 Likert-type statements. The lower the score, the greater the degree of shyness. This measure examines how quiet or talkative one tends to be in various situations, and thus focuses on shy behavior. Since the PSU program is designed to change behavior, this measure was selected because it allows for an assessment of self-reports of talkativeness. McCroskey et al. (1981) provide

support for the criterion validity of the measure. Reliabilities for pretest and posttest measures were .93, .92.

Communication apprehension was operationalized by the Personal Report of Communication Apprehension (PRCA-24) (McCroskey, 1982) which consists of 24 Likert-type statements. The PRCA measures four dimensions of communication apprehension: group (GROUP), meeting (MEET), dyadic (DYAD), and public speaking (PS) apprehension. The items were summed to yield an overall PRCA score. Pretest and posttest measures of communication apprehension were taken. The reliability coefficients using Cronbach's alpha (Cronbach, 1951) for pretest and posttest measures, respectively, were: PRCA overall .95, .95; GROUP .89, .88; MEET .92, .89; DYAD .88, .85; PS .89, .87.

Treatment Variable

Treatment condition served as the independent variable, which had two levels. Treatment condition #1 was the reticence program (Option D) at PSU (already described), and treatment condition #2 was the public speaking option (Option A) of the basic performance-based speech communication course. Option A introduces students to principles of speech communication, provides instruction and practice in public speaking, and to a lesser extent, small group communication. About one-half of the course is devoted to instruction and practice in preparing and delivering public presentations. In addition to the two treatment conditions was a control group, consisting of students recruited from introductory computer science courses.

Procedures

Participants were recruited the second week of the semester. Students in all three conditions were given a questionnaire packet which consisted of the PRCA-24, Shy Scale, and SRS. Participants completed the same measures during the last week of classes. Pre- and post-measures were administered during

class time.

Preliminary Analyses

Several preliminary analyses were undertaken prior to testing the hypothesis and research question. First, the SRS was subjected to factor analysis with varimax rotation (See Table 1). Four factors were extracted, accounting for 60.7% of the variance. The factors corresponded well to the four identified by Jones and Russell (1982): difficulties meeting people (MP), problems communicating (PC), self-consciousness and negative affect (SCNA), and feelings of isolation (FI).

Pearson correlation coefficients were computed for the three pretest measures. All three correlations were statistically significant. The PRCA and the SRS showed a strong association ($r = .76$; $p<.001$). The PRCA and the SHY scales were also strongly associated ($r= - .71$; $p<.001$)[2] and the SRS and the SHY scale were significantly correlated ($r = -.57$; $p<.001$).

A crosstabulation was conducted to look at the relationship between year and condition. A significant Chi Square [$(6, N = 175) = 17.12$, $p=.009$] revealed a relationship between condition and year in school. Seniors were less likely to be in the control group and freshmen were less apt to populate the reticence group.

In addition to the crosstabulation, a series of ANOVAs were run in order to test the relationship between condition and pretest score. Table 2 presents pretest means by treatment condition for all measures. On the Shy scale, a significant main effect for condition was obtained, $F(2,169) = 21.66$, $p<.001$. A Scheffe test revealed that those in the reticence group (Option D) reported significantly ($p<.05$) higher levels of shyness than those in the public speaking group or those in the control group. Recall that a lower score indicates greater shyness on this scale.

An analysis of variance using the pretest PRCA scores also indicated a significant relationship between condition and pretest score, $F(2,173) = 55.44$, $p<.001$. Furthermore, a significant relationship between condition and pretest score was also discovered for each of the four subscales of the PRCA: dyad, $F(2,174) = 28.99$, $p<.001$; meetings, $F(2,174) = 49.67$, $p<.001$; group, $F(2,174) = 34.52$, $p<.001$; and public speaking, $F(2,173) = 31.38$, $p<.001$.

A series of Scheffe tests indicated that those in the reticence section had significantly ($p<.05$) higher pretest scores than both the public speaking option and the control group. This relationship held true for the overall PRCA as well as all four dimensions of the PRCA.

The relationship between condition and pretest SRS score was also found to be significant, $F(2,167) = 30.00$, $p<.001$. In addition, a significant relationship between condition and pretest score was discovered for each of the four dimensions of the SRS: meeting people, $F(2,171) = 21.94$, $p<.001$; problems communicating, $F(2,169) = 30.00$, $p<.001$; self-consciousness and negative affect, $F(2,169) = 11.21$, $p<.001$; and feelings of isolation, $F(2,169) = 12.01$, $p<.001$.

A series of Scheffe tests indicated that those in the reticence section had significantly ($p<.05$) higher pretest scores than both the public speaking group and the control group. This relationship held true for the overall SRS as well as all four of the dimensions of the Social Reticence Scale.

To summarize, the preliminary analysis suggested very consistent patterns. Specifically, those in the reticence group (Option D) reported more shyness and apprehension than both the public speaking group (Option A) and the control group.[3]

Results

Statistical Hypothesis 1: There is a difference between treatment groups on the Social Reticence Scale (SRS), controlling for pretest score.

In order to test hypothesis 1 an analysis of covariance model (ANCOVA) was developed[4]. Treatment condition served as the independent variable, pretest score on the SRS was treated as a covariate, and posttest on the SRS served as the dependent variable. This single factor covariance model explained approximately 64% of the variation in the posttest SRS scores.

Before progressing with the analysis of covariance it was necessary to test the homogeneity of the regression coefficient, since Kelly et al. (1990) found a significant interaction between regression coefficient and treatment group. In order to test the homogeneity of the coefficients, two interaction terms were added as covariates. These interaction terms were calculated using a two-step procedure. First two dummy variables were created for the treatment category, using the control group as the reference condition. And second, both dummy variables were multiplied by the pretest score in order to form the two additional covariates. With these three covariates, an analysis of covariance was conducted. Of interest was whether or not the additional two covariates explained a significant amount of the variance in posttest scores. The analysis of covariance revealed that neither of the two covariates were significant, $F(1,158) = 1.57$, $p>.2$ and $F(1,158) = 1.12$, $p>.2$. Since there was not sufficient reason to keep the interaction terms, both were dropped from the model.

The single factor ANCOVA revealed that posttest means were significantly different between conditions on the SRS. For the overall SRS, the means of the treatment conditions were significantly different, $F(2,163) = 6.65$, $p<.002$. Table 3 shows that the reticence group scored lowest, the public speaking group scored highest, with the control group falling in between the two other groups.

As discussed previously, the SRS is composed of four dimensions. In order to examine differences within these dimensions, four additional ANCOVA models

were developed and tested (using the pretest for each respective dimension as a covariate). Two of the four dimensions, problems communicating (PC) and meeting people (MP), showed significant differences between treatment conditions, $F(2,165) = 3.70$, $p<.03$ and $F(2,168) = 8.61$, $p<.001$ respectively (See Table 5). The difference in posttest means was not significantly different for self-consciousness and negative affect, $F(2,166) = .60$, $p>.5$, power = .151 and feelings of isolation, $F(2,166)$, $p>.2$, power = .314.

A series of Scheffe tests indicated significant ($p<.05$) differences among treatment means for the overall test, as well as the two significant ($p<.05$) dimensions of the SRS. On the overall SRS as well as the meeting people dimension, a consistent pattern was found. Specifically, the reticence group scored significantly lower than both the control and the public speaking group, when controlling for pretest score. However, the public speaking and control groups did not significantly differ in their scores. On the problems communicating dimension, those in the reticence option scored significantly lower than those in the public speaking option. Although the remaining dimensions did not have significantly different treatment means, it is of interest to note that the reticence group scored consistently lower than the other two groups.

Statistical Hypothesis 2: There is a difference between treatment groups on the SHY scale, controlling for pretest.

Similar to the SRS, a covariance model was developed with a single covariate (pretest SHY score) and single independent variable. This single factor covariance model explained approximately 75% of the variation in posttest SHY scores. The analysis of covariance revealed that the treatment group means were significantly different, $F(2,167) = 5.74$, $p=.004$. A Scheffe test indicated that those in the reticence section scored higher than those in

either the public speaking group or the control group (See Table 3). Recall that a higher score indicates less reported shyness.

Statistical Hypothesis 3: There is a difference between treatment groups on the PRCA scale, controlling for pretest.

In order to test hypothesis 3, a covariance model was used with pretest PRCA functioning as the covariate. The pretest by condition interaction terms were not incorporated into the covariance model because they did not explain a significant portion of the variation in posttest scores. On the overall PRCA, a significant main effect was discovered for condition, $F(2,170) = 13.84$, $p<.001$. A Scheffe test revealed that participants in the reticence section had lower scores than participants in both the public speaking course and participants in the control group, when controlling for pretest score ($p<.05$). Furthermore, those in the public speaking group had lower scores than those in the control group (See Table 3).

In addition to the overall PRCA, three of the four subscales (using the respective pretest score as a covariate) indicated significant differences between treatment groups: public speaking, $F(2,170) = 11.43$, $p<.001$; group, $F(2, 173) = 6.78$, $p=.001$; and meet, $F(2,172) = 4.61$, $p<.02$. The remaining subscale, dyad, was not statistically significant, $F(2,172) = 2.64$, $p>.05$, power = .519.

A series of Scheffe tests indicated the following significant ($p<.05$) differences on the PRCA subscales (controlling for respective pretest score):

(1) On the meeting subscale, those in the reticence section had lower scores than both the public speaking group and the control group.

(2) On the group subscale, the participants in the reticence section as well as the participants in the public speaking group scored lower than those in the control group.

(3) On the public speaking subscale, participants in the reticence section had lower scores than both those in the public speaking group and the control group. In addition, those in the public speaking group had lower scores than those in the control group.

Discussion

The purpose of this study was to assess the effectiveness of the PSU Reticence Program in alleviating self-reported shyness and communication apprehension. This section opens with a discussion of conclusions that can be drawn about treatment effects, and then considers important questions raised by the research that warrant further investigation.

Results of this study make it reasonable to conclude that the PSU Reticence Program (compared to a control condition) is effective in reducing self-reported shyness and communication apprehension and is more effective than a performance-based speech communication course. After controlling for pretest effects, participants in the reticence group (Option D) showed a significant downward shift on overall SRS scores, on the two SRS dimensions of problems communicating and difficulty meeting people; on the PRCA-24, its public speaking, group and meeting subscales; and on the Shy Scale.

The finding that the two dimensions of the SRS on which the reticent group showed significant treatment effects (problems communicating and difficulty meeting people) can be explained by the nature of the treatment program itself. The program focuses on overcoming problems communicating in a variety of contexts by teaching participants specific kinds of skills (e.g., how to analyze situations, techniques for preparing, methods for maintaining conversation, etc.). The problems communicating dimension of the SRS includes items that tap difficulty expressing opinions and being assertive, not knowing what to say in a group, and difficulty communicating effectively. These are

areas addressed by the program, and students have the opportunity to practice these kinds of skills. In fact, students are required to engage in interactions to develop their communication skills. Since many of these interactions are with strangers, it is reasonable that participants would report improvements in the area of meeting new people and making friends. In addition, that students were required to engage in actual interactions and performances, may have contributed to their perceptions of improvement as measured by the Shy Scale. Recall that this scale focuses on how much one talks or remains quiet, a behavioral aspect of shyness.

Participants in the public speaking option (Option A) of the basic speech course did not report significant decreases in shyness. This is undoubtedly due to the focus of instruction in the course: the public speaking context, primarily, and the problem-solving small group to a lesser extent. One would not expect large downward shifts in shyness from this type of instructional program. However, the Kelly, Duran, and Stewart (1990) study did find reductions in shyness (on the problems communicating dimension of the SRS) for the speech group. Perhaps this could be attributed to differences between the two performance-based speech courses which served as treatment conditions, since these courses were not standardized (unlike the reticence program which is highly standardized). Another possibility is differences between the samples used in the two studies as previously discussed.

The significant reduction Option D students reported on their levels of communication apprehension is consistent with the Kelly et al. (1990) study as well as other published research (see Kelly, 1984 for a summary) which shows that skills training is effective in reducing anxiety. Although no specific method such as systematic desensitization is included in the PSU Reticence Program, students' anxiety may have been alleviated in part because of

successful communication experiences during the course of treatment (Phillips, 1986).

Similar to Kelly et al. (1990) this study found a significant treatment effect on public speaking apprehension scores for the performance-based speech class relative to the control group. In fact, in Kelly et al. (1990) those in the speech course showed even greater reduction in public speaking apprehension than those in the reticence condition. However, in the present study, those in Option D improved more than those in Option A on the public speaking sub-scale. These findings suggest that both forms of treatment are effective in alleviating anxiety about public speaking, and this can be explained by the time devoted in both courses to instruction and practice in public speaking. However, for those who are high on apprehension or shyness, it would appear that the Reticence Program is superior to a public speaking course in reducing fear of public speaking (See note 3).

Finally, on the group dimension of the PRCA, both Option A and Option D students reported significant reductions in apprehension compared to the control group. Both of these courses devote about the same amount of time to the group context, and students participate in groups in both options. This is a plausible explanation for the similar level of improvement reported by participants in the two conditions.

The present study suggests several areas for future research. First, there is a need for research that attempts to refine the existing typology of communication problems. Participants in this study reported problems with shyness and communication apprehension. McCroskey and Richmond (1982) argue that communication apprehension is distinct from shyness, but this study has not clarified the differences. Moreover, these results do not shed any light on the distinctions between shyness and reticence. In the PSU interviews

people report different kinds of communication problems, but we may not have yet fully captured the range of those problems with the three labels of shyness, reticence, and communication apprehension.

Second, research should be done to develop a measure of reticence that is consistent with Phillips' (1991) conceptualization of the problem. As noted earlier, without a measure of reticence, it is difficult to conclude that the PSU Program reduces reticence. One can only conclude that it alleviates shyness and apprehension. The development of a reticence measure might provide a more appropriate operationalization of the reticence concept and may aid in research designed to refine the typology of communication problems.

Two other types of studies are warranted. Research is needed to test the effectiveness of the PSU Reticence Program in changing actual behavior, rather than self-reports of behavior as tested in the present study. Moreover, which components of the program are the largest contributors to its effectiveness remains to be explored. Is goal setting the most important part of the program? Is the public speaking training? Can the program be reduced in scope and remain as effective? These kinds of questions have yet to be addressed.

In summary, given the results on treatment effects, the conclusion appears to be warranted that the PSU Reticence Program is effective in reducing self-reported shyness and communication apprehension. Moreover, taking a performance-based speech course can lead to reductions in students' levels of communication apprehension, especially apprehension in the group and public speaking contexts. In addition to the suggestions outlined above, further research is needed to determine (1) which aspects of the Reticence Program are most influential in producing treatment effects; and (2) whether the Reticence Program produces changes in actual communication behavior.

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Notes

[1]Between pretest and posttest data collection, experimental mortality was very low, particularly in the two treatment groups. Of those from whom pretest measures were completed, no posttest data were collected for three Option D (reticence group) students, eight Option A (public speaking group) participants; and eleven control group students. These numbers reflect mortality rates of 5%, 10%, and 15%

[2]The negative correlation occurred because a lower score means higher levels of shyness on the SHY Scale, while a higher score is indicative of greater shyness on the Social Reticence Scale (SRS).

[3]In the classical experimental design, one would normally use treatment groups and a control group for which there were no significant differences on pretest scores. Ideally, one would use random assignment to conditions, but this is not feasible at PSU because of the enrollment and registration procedures associated with the reticence and speech courses. An alternative, using a waiting-list control group, posed ethical concerns. The Speech 100 course is required for graduation at PSU, and the Reticence Program (Option D) is one options of that basic course. Recall that students are unaware of Option D until they have registered for a regular section of the course, have attended the first class session, and been informed about the special option. They then must go for an interview to get into the course. Asking these individuals to wait one full semester to take the course raises ethical issues for several reasons. First, for the very reticent (shy or apprehensive), the process of enrolling in the regular section and going for an Option D interview is highly distressing because of the anxiety it generates. To ask them to wait

and undergo the entrance process again (in any form) may increase their apprehension about the experience. Second, for these students it would mean waiting for an entire semester to get any help with their communication problems, which seems unfair. For many, who delay taking the course until their junior or senior year because of their fears, this seems like an especially unfair burden. Finally, this is a required course for graduation, and asking or forcing those who seek help to wait poses some risk in terms of their ability to graduate on time. For these reasons, it did not seem appropriate to use a waiting-list control group procedure.

Because of pretest differences, statistical procedures used to test the hypothesis and research question had to control for those differences. However, as one reviewer noted, a potential problem remains when groups are unequal at pretest time. Those in the control group are not necessarily shy or apprehensive, like the reticent group, and therefore, might not serve as an adequate control group. Therefore, to address this problem, in addition to the analyses reported in the results section, two additional sets of modified analysis were conducted to compensate for pretest differences on the dependent measures. These modified analyses are reported here.

In the first modified analysis, only those participants in the two treatment conditions and the control group with pretest PRCA scores one standard deviation above the population mean were selected for analysis (PRCA score greater than 80). Except for the constraints placed on the participants in the sample, the analysis was identical to those described in the results section. In comparison to the results for the full sample, the modified ANCOVA's indicated similar patterns (See Table 4). Specifically, the treatment means on the posttest were significantly different for the overall PRCA, $F(2,58) = 4.84$, $p=.011$ and two of its dimensions: public speaking, $F(2,58) =$

4.44, p=.016 and group, $F(2,59) = 3.62$, p=.033. A series of Scheffe tests revealed that the reticence group had significantly ($p<.05$) lower posttest scores than the control group. This relationship was witnessed for the overall PRCA as well as both of the significant subscales (public speaking and group). The relationship between condition and score on the meetings subscale was not significant, $F(2,58) = 1.87$, p=.163; however, this might be due to the loss in the power of the test. The power for the entire sample test was .774, while the power of the modified sample test (PRCA score higher than 80) was only .374.

Again using the sub-sample of only highly apprehensive participants, the relationship between condition and overall SRS score was found to be significant, $F(2,54) = 6.11$, p=.004. In addition, the SRS problems communicating dimension was statistically significant, $F(2,54) = 4.45$, p=.016. A Scheffe test revealed that those in the reticence group (Option D) scored significantly ($p<.05$) lower on the posttest SRS than both those in the control group and those in the public speaking group (Option A), while those in the public speaking group did not significantly differ from the control on their overall SRS score. An additional Scheffe test indicated that those in the reticence group scored lower than the control group on the problems communicating (PC) subscale. Unlike for the analysis using the full sample, the relationship between condition and score on the meeting people (MP) subscale of the SRS was not significant; however, this might also be due to the large decrease in power (original power = .966, modified analysis power = .513).

The relationship between condition and posttest SHY scores was not found to be significant, $F(2,58) = .625$, p=.539) when including only those participants with pretest PRCA scores above 80 (in contrast to the analysis including the

full sample). The lack of significance on the SHY scale also might be due to the drastic loss in the power of the test (original analysis power = .861, modified analysis power = .151).

In the second set of modified analysis, only those participants who scored lower than 32 on the SHY scale were studied (equivalent to one standard deviation below the mean). The patterns of statistical significance for the second set of modified analysis for the three scales were nearly identical to the first set of modified analysis (See Table 5). The only difference was on the problems communicating (PC) dimension of the SRS. In the first set of modified analysis (PRCA pretest greater than 80), those in the reticence group scored significantly lower than those in the control group on the problems communicating dimension. In the second set of modified analyses (SHY pretest less than 32) those in the reticence group scored lower than both those in the control group and those in the public speaking group on the problems communicating dimension.

Results of these analyses using only high apprehensive and high shy participants (eliminating pretest differences, in essence) support the validity of the findings reported in the results section.

[4]Analysis of covariance models are appropriate in order to "statistically remove pre-existing differences among groups which are used in experimental tests but which must be assigned intact to various treatment conditions" (Wildt & Ahtola, 1978, p.6).

Table 1

Factor Analysis of Social Reticence Scale

Items	Primary Factor Loadings			
	Factor 1 Problems Communicating	Factor 2 Difficulty Meeting People	Factor 3 Self consciousness and negative affect	Factor 4 Feelings of isolation
1. I frequently have difficulties in meeting new people.	—	.65	—	—
2. I frequently feel depressed or sad.	—	—	.63	—
3. I have a hard time expressing my opinions to others.	.70	—	—	—
4. Even my friends don't seem to know me very well.	—	—	—	.86
5. Many people apparently think that I am unfriendly.	—	.76	—	—
6. It is difficult for me to think clearly in the presence of others.	.60	—	—	—
7. I am very self-conscious.	—	—	.68	—
8. It is difficult for me to make new friends.	—	.65	—	—
9. I frequently feel isolated from other people.	—	—	.52	—
10. I have difficulty being assertive, even when it is appropriate or I need to be.	.69	—	—	—
11. Most people don't know what I am really like.	—	.45	—	—
12. Many people may think I'm snobbish or bored because I'm not more outgoing.	—	.84	—	—

13. It is difficult for me to know what to say in a group.	.72	—	—	—
14. Frequently I am preoccupied with my own feelings and reactions.	—	—	—	.48
15. I frequently avoid or don't enjoy potentially good experiences.	—	.44	—	—
16. I often feel lonely.	—	—	.65	—
17. I usually keep quiet in groups, even when I have something to say.	.72	—	—	—
18. Even mnay of my friends don't know any of my true assets.	—	—	—	.78
19. I'm afraid many people think I am weak.	—	—	.47	—
20. I often have difficulty in communicating effectively.	.65	—	—	—
21. I wish that I wasn't so sensitive to my own thoughts and feelings.	—	—	.64	—

Factor 1: Eigenvalue 8.75, accounting for 39.8% of variance.
Factor 2: Eigenvalue 2.01, accounting for 9.1% of variance.
Factor 3: Eigenvalue 1.33, accounting for 6.0% of variance.
Factor 4: Eigenvalue 1.26, accounting for 5.7% of variance.

Table 2

Unadjusted Pretest Means for All Dependent Measures

Measure	Option D (Reticence)	Option A (Pub. Speaking)	Control
SRS Overall***	70.9^{ab}	55.0^{a}	51.6^{b}
MP***	19.1^{ab}	14.2^{a}	13.3^{b}
PC***	20.5^{ab}	15.1^{a}	14.4^{b}
SCNA***	19.0^{ab}	16.4^{a}	14.8^{b}
FI***	8.6^{ab}	6.7^{a}	6.6^{b}
SHY Scale***	32.1^{ab}	44.7^{a}	41.5^{b}
PRCA-24***	90.0^{ab}	65.1^{a}	65.8^{b}
Group***	21.6^{ab}	15.1^{a}	15.8^{b}
Meet***	23.2^{ab}	15.9^{a}	16.0^{b}
Dyad***	19.4^{ab}	14.0^{a}	14.6^{b}
PS***	25.8^{ab}	20.1^{a}	19.5^{b}

***Significant at the $p<.001$ level; row means with the same superscript differ at the $p<.05$ level.

On the SHY scale a lower number indicates greater shyness.

MP = difficulty meeting people

PC = problems communicating

SCNA = self-consciousness and negative affect

FI = feelings of isolation

PS = public speaking

Table 3

Posttest Means for Dependent Measures (Adjusted for Pretest Score)

Measure	Option D (Reticence)	Option A (Pub. Speaking)	Control
SRS Overall**	49.9^{ab}	56.7^{a}	55.4^{b}
MP*	13.1^{ab}	15.7^{a}	14.7^{b}
PC***	13.3^{a}	15.1^{a}	14.6
SHY Scale**	44.5^{ab}	41.8^{a}	40.7^{b}
PRCA-24***	54.9^{ab}	62.8^{ac}	68.5^{bc}
Group***	13.3^{a}	14.0^{b}	15.7^{ab}
Meet*	13.9^{ab}	15.9^{a}	16.7^{b}
PS***	16.3^{ab}	18.2^{ac}	20.1^{bc}

Row means with the same superscript differ at the $p<.05$ level.

*Significant at the $p<.05$ level

**Significant at the $p<.01$ level

***Significant at the $p<.001$ level

On the SHY Scale a lower number indicates greater shyness.

MP = difficulty meeting people

PC = problems communicating

SCNA = self-consciousness and negative affect

FI = feelings of isolation

PS = public speaking

Table 4

Posttest Means Adjusted for Pretest Score for Dependent Measures (Modified Analysis with PRCA Score Greater than 80

Measure	Option D (Reticence)	Option A (Pub. Speaking)	Control
SRS Overall**	57.0[ab]	66.3[a]	67.1[b]
MP	15.7	18.1	16.1
PC*	15.9[a]	18.6	19.1[a]
SHY Scale	32.7	29.5	28.6
PRCA-24*	69.1[a]	74.3	84.6[a]
Group*	16.1[a]	17.4	19.7[a]
Meet	17.7	19.6	20.7
PS*	19.9[a]	20.9	24.5[a]

Row means with the same superscript differ at the $p<.05$ level.

*Significant at the $p<.05$ level

**Significant at the $p<.01$ level

On the Shy Scale a lower number indicates greater shyness.

MP = difficulty meeting people

PC = problems communicating

SCNA = self-consciousness and negative affect

FI = feelings of isolation

PS = public speaking

Table 5

Posttest Means Adjusted for Pretest Score for All Dependent Measures (Modified Analysis with SHY Score Less Than 32)

Measure	Option D (Reticence)	Option A (Pub. Speaking)	Control
SRS Overall*	53.6^{ab}	65.1^{a}	63.1^{b}
MP	15.4	18.0	16.1
PC**	14.5^{ab}	18.2^{a}	18.7^{b}
SHY Scale	32.7	29.5	28.6
PRCA-24*	65.0^{a}	70.7	82.4^{a}
Group*	15.5^{a}	15.8	23.7^{a}
Meet	16.6	17.3	20.3
PS*	18.6^{a}	21.1	23.7^{a}

Row means with the same superscript differ at the $p<.05$ level.

*Significant at the $p<.05$ level

**Significant at the $p<.01$ level

On the SHY Scale a lower number indicates greater shyness.

MP = difficulty meeting people

PC = problems communicating

SCNA = self-consciousness and negative affect

FI = feelings of isolation

PS = public speaking

FI = feelings of isolation